

Work Order ID 106034

106034

Page 1

August-28-13 12:32:50 PM

Item ID: D6101-005 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Saddle Billet
 Start Date: 8/28/13 Start Qty: 40.00 *40* Cust Item ID:
 Required Date: 8/28/13 Req'd Qty: 40.00 *40* Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 13-08-29 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6101	Rev B								

100 PURCHASING 0.00
 100 Purchasing Memo 0.00
 Purchasing Issue P/O: 21243
 a) Description: Aluminum billet
 b) 5.00" x 8.250" x 2.50" thick
 c) Tolerance on all dimensions are +0.030"/-0.000"
 d) Grain direction along 5.00" length
 e) Material: 7075-T7351 (QQ-A-250/12)
 f) Material certification required

CL 13/09/09 (40)

110 Receive & Inspect for Damage & Mat'l Certs 0.00
 110 Packaging Memo 0.00
 Packaging Ensure material certification is attached

P-13/5/20 (40)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Misabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

Work Order ID 106034

106034

Page 2

August-28-13 12:32:50 PM

Item ID: D6101-005 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Saddle Billet
 Start Date: 8/28/13 Start Qty: 40.00 *40* Cust Item ID:
 Required Date: 8/28/13 Req'd Qty: 40.00 *40* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing Memo Ensure Material certification comply to Dwg D6101	0.00 0.00				40	0		
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: <u>41</u> Memo	0.00 0.00				40	0		
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							

13-09-24

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
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<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	
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Picklist Print

August-28-13 12:32:50 PM

Page 1

Work Order ID: 106034

Parent Item: D6101-005

Parent Item Name: Saddle Billet

Start Date: 8/28/13

Required Date: 8/28/13

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP A: 01.05.04New IssueC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-005P 7075-T7351 8.25X5.0X2.5		Purchased	No			110	Each	0.0000	1	40		8/13/13	(40)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

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Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
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		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED
09/07/15/W

13-08-29
 106037 ML5
 WASH. FIELD
 A. J. BENTON
 SUB. OF 106037
 INSTANT ROLL END COPY
 INSTANT ROLL END COPY

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN AUTHORIZATION OF DART AEROSPACE LTD.	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO21243**

Purchase Order Date 9/9/2013

PO Print Date 9/9/2013

Page Number 1 of 2

Order From : VU-THY001

THYSSENKRUPP MATERIALS CA LTD
Q/A VPK METAL
C/O T27540
PO BOX 4275 POSTAL A
TORONTO, ON M5W 5V8
CANADA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED
9/9/2013

Contact Name
Vendor Phone 905-669-9444

Ship To Contact
Ship To Phone
Ship Via: Yours ppd
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB DDP - (Delivered Duty Paid)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D6101-005P	7075-T7351 8.25X5.0X2.5	9/13/2013 Yes 9/13/2013		40.00 Each	\$32.94	\$1,317.60
AS PER DWG D6101 REV. B B106034 MATERIAL: 7075-T7351 (QQ-A-250/12) SIZE: 5.00" X 8.250" X 2.50" THICK GRAIN DIRECTION ALONG: 5.00" LENGTH TOLERANCE ON ALL DIMENSIONS ARE +0.030"/-0.000"							
Line Total:							\$1,317.60
2	D6101-007P	7075-T7351 8.25X7.75X2.5	9/13/2013 Yes 9/13/2013		20.00 Each	\$51.05	\$1,021.00
AS PER DWG D6101 REV. B B106260 MATERIAL: 7075-T7351 (QQ-A-250/12) SIZE: 7.750" X 8.250" X 2.50" THICK GRAIN DIRECTION ALONG: 7.750" LENGTH TOLERANCE ON ALL DIMENSIONS ARE +0.030"/-0.000"							

PO Instructions: LONG TERM AGREEMENT
(LTA#131001)

Note:

9/9/2013

26

SHIP FROM: B I L L O F L A D I N G
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

No: PEC 841167
Ship Date 17Sep13 at 8:26 From PFW
Probill
Via VIM DELIVERY
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7

Ship To: (1)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7
Tel: 613-632-9577 Fax: 613-632-1053

B I L L O F L A D I N G

1) Our Order PEC-603399- 1 Your PO # 21243
Part # D-6101 REV B B106034 Rel #

ALUMINUM PLATE 7075T7351

2.50" THICK X 5.0000" X 8.2500"

*****GRAIN DIRECT TOWARD 5.00 DIM*****

Heat Number	Tag No	Quantity	PCS	Wt LBS
315491	217011	11.46 SFT	40	426

2) Our Order PEC-603399- 2 Your PO # 21243
Part # D-6101 REV B B106260 Rel #

ALUMINUM PLATE 7075T7351

2.50" THICK X 7.7500" X 8.2500"

*****GRAIN DIRECTION TOWARD 7.750" DIM*****

Heat Number	Tag No	Quantity	PCS	Wt LBS
315491	217013	8.88 SFT	20	328

TOTAL:	Tags	PCS	LBS
	2	60	754

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT
WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR
TO SHIPPING.

ATTN: CHANTAL/LINDA

** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
** REFERENCED ON IT **

TOTAL TOTAL ITEMS (1&2) 1 SKID G.W. 774 LBS

Page: 1Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ETRE
RAPPORTEES IMMEDIATEMENT.
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY
RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

RECU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

DATE

B I L L O F L A D I N G
Ship From: THYSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

No: PEC 841167
Ship Date 17Sep13 at 8:26 From PFW
Probill
Via VIM DELIVERY
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

Ship To: (1)
DART AEROSPACE

=====

B I L L O F L A D I N G

*CUSTOMER PICK-UP HRS AT THYSENKRUPP MATERIALS NA
CONCORD, ONT.* *** 9:00 AM TO 4:00 PM ***
**** TEL. 800-926-2600 ****

* WE STOCK STAINLESS STEEL *
* PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

***PLEASE NOTE A \$25.00 ENERGY SURCHARGE WILL BE
ADDED TO EVERY ORDER.***

Page: 2 Last

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ETRE
RAPPORTEES IMMEDIATEMENT.
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY
RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

REÇU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

DATE

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM PLATE 7075T7351

2.50" THICK X 5.0000" X 8.2500"

PART NO. D-6101 REV B B106034

PO/Rel 21243

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-841167-001

17Sep13

Signed by: *y*

+2

Pg 1/3



COPPER & BRASS SALES, INC.
5 STERLING DRIVE
WALLINGFORD CT

06492-2438



COPPER & BRASS SALES
P.O. BOX 5116
SOUTHFIELD MI

48086

CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER&BR F50702 4776 INCLUSION SERIAL#: 20121115F50702 PAGE 1 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM 5400152773				Constellium ORDER NO. 235-713071	
ALLOY 7075	CLAD 00	TEMPER T7351	GAUGE 2.50000	WIDTH 60.500	LENGTH 144.500
ITEM ORDERED DIST. AEROSPACE/COMM. SPEC PLATE, SAWED MILL					
CUSTOMER SPECIFICATION EAC-MS-1011E					
PART NUMBER ALFLR00249		BIL NUMBER F50700		DATE SHIPPED 11/15/12	
WEIGHT SHIPPED 8,980		NO. OF PIECES 4		GOVT. CONTRACT NO.	

CERTIFICATION

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC
Rt 2 South, Century Road
P.O. BOX 68
RAVENSWOOD, WV 26164 USA

Rodney J. Felty
Rodney J. Felty - Laboratory Manager

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		MIN	MAX									
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.											
315491	LT	2	70.6	70.8	58.6	59.0	12.0	12.5	40.8	41.2									
All material contained in lot 315491 was cast and manufactured in the USA.																			

ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS																			

ASTM B594 REV 09 2009 CLASS A																			
AMS 4078J, ASTM B209-10, MMS159T, AMS-QQ-A-250/12, CMMP025U AMS STD215498, BSS7055A, GAMPE9101B, PS21211L, DPS4.713AH04																			
<div>Handwritten: 315491/25</div>																			
CHEMICAL COMPOSITION	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		ZINC		TITANIUM		OTHERS	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
	SEE ACTUAL CHEMICAL COMPOSITION																		
ALUMINUM REMAINDER																			

P-660-1550 (08/11)

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER

CstAr

Wgt.: 1,977.698 LB

Del.: 2402293218

CstOr VIM-618575

Date 02/04/2013

John R. Zambetti

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM PLATE 7075T7351
2.50" THICK X 5.0000" X 8.2500"
PART NO. D-6101 REV B B106034

PO/Rel 21243

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-841167-001

17Sep13

Signed by:

Pg 2/3



COPPER & BRASS SALES, INC.
5 STERLING DRIVE
WALLINGFORD CT

06492-2438



CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES
P.O. BOX 5116
SOUTHFIELD MI

48086

COPPER&BR F50702 4776 INCLUSION SERIAL#: 20121115F50702 PAGE 2 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM# 5400152773				Constellium ORDER NO. 235-713071	
ALLOY 7075	CLAD. 00	TENPER T7351	GUAGE 2.50000	WIDTH 60.500	LENGTH 144.500
ITEM ORDERED DIST. AEROSPACE/COMM. SPEC PLATE, SAWED MILL					
CUSTOMER SPECIFICATION EAC-MS-1011E					
PART NUMBER ALFLR00249		BIL NUMBER F50700		DATE SHIPPED 11/15/12	
WEIGHT SHIPPED 8,980		NO. OF PIECES 4		GOVT. CONTRACT NO.	

CERTIFICATION

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sale. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC
Rt 2 South, Century Road
P.O. BOX 88
RAVENSWOOD, WV 26184 USA

Rooney J. Feltz
Rooney J. Feltz - Laboratory Manager

										COND % IACS		MIN		MAX	
LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %								
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.							
ACTUAL CHEMICAL COMPOSITION															
315491	C	0.06	SI=	0.06	FE=	0.13	CU=	1.50	MN=	0.04	MG=	2.55			
			CR=	0.20	ZN=	5.49	TI=	0.02	ZR=	0.01					
			OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER												
<i>Only 13 pages</i>															

P-880-1580 (08/11)

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER

Del.: 2402293218

CstAr

CstOr VIM-618575

Wgt.: 1,977.698 LB

Date 02/04/2013

John L. Zambetti

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM PLATE 7075T7351

2.50" THICK X 5.0000" X 8.2500"

PART NO. D-6101 REV B B106034

PO/Ref 21243

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-841167-001

17Sep13

Signed by: Pg 3/3



COPPER & BRASS SALES, INC.
5 STERLING DRIVE
WALLINGFORD CT

06492-2438



CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES
P.O. BOX 5116
SOUTHFIELD MI

48086

COPPER&BR F50702 4776 INCLUSION SERIAL#: 20121115F50702 PAGE 3 OF 3

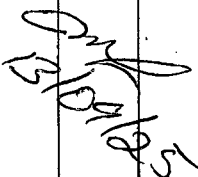
CUSTOMER PURCHASE ORDER NO. & ITEM 5400152773				Constellium ORDER NO. 235-713071	
ALLOY 7075	CLAD. 00	TEMPER T7351	GUAGE 2.50000	WIDTH 60.500	LENGTH 144.500
ITEM ORDERED DIST. AEROSPACE/COMM. SPEC PLATE, SAWED MILL					
CUSTOMER SPECIFICATION BAC-MS-1011E					
PART NUMBER ALFLR00249		S/N NUMBER F50700		DATE SHIPPED 11/15/12	
WEIGHT SHIPPED 8,980		NO. OF PIECES 4		GOVT. CONTRACT NO.	

CERTIFICATION

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC
Rt 2 South, Century Road
P.O. BOX 68
RAVENSWOOD, WV 26164 USA

Rodney J. Felty
Rodney J. Felty - Laboratory Manager

LOT NUMBER		TEST DIRECTION		NO. OF TESTS		ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND. % IACS									
						MIN. MAX.		MIN. MAX.		MIN. MAX.		MIN. MAX.									
THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE.																					
THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.																					
CHEMISTRY BY OES: ARNSPARK																					
CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT.																					
WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399.																					
WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557.																					
Mark Paperwork: ALFLR00249																					
DUNS Number: 090570149; CAGE Code: 1YWL9																					
Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product.																					
"END OF CERTIFICATION"																					
																					
CITEN COMP	ALLOY		SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		ZINC		TITANIUM		OTHERS		
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	EACH MAX.	TOTAL MAX.	
SEE ACTUAL CHEMICAL COMPOSITION																					
ALUMINUM REMAINDER																					

P-360-563 (06/11)

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER

Del.: 2402293218

CstAr

CstOr VIM-618575

Wgt.: 1,977.698 LB

Date 02/04/2013

John R. Zambetti